EXHIBIT C-1

R-12 ENGINEERING CHANGE PROCEDURES

1. PURPOSE:

The purpose of this procedure is to provide a uniform method for proposing and recording engineering effort and changes to aircraft and equipment associated thereto. This procedure is established to provide the SPO with the necessary information to evaluate and make decisions regarding changes proposed or under consideration for adoption, and to effect necessary coordination with all interested agencies.

2. SCOPE:

This procedure covers Engineering Studies and Change Proposals affecting aircraft, aircraft equipment, support equipment and associated materiel.

3. DEFINITIONS:

a. Engineering Study

The term "Engineering Study" as used herein is any proposal to accomplish design or development effort for the purpose of arriving at a major modification; developing new equipment; prototyping fixes for service-revealed deficiencies, etc., but not including routine engineering of an in-plant, material substitution or product improvement nature.

b. Change Proposal

The term "Change Proposal" as used herein refers to any proposal to accomplish a change to an article. The Change Proposal will result in a Service Bulletin which serves as a record of the change and prescribes the method of accomplishing the change.

c. Service Bulletin

The term "Service Bulletin" as used herein refers to a publication released by the contractor which outlines the exact method of accomplishing a change to an article step-by-step including any requirement for parts and the disposition of removed parts. The Service Bulletin is normally but not necessarily the result of a Change Proposal. Service Bulletin procedures are covered in Exhibit C-2.

4. INITIATION OF PROPOSALS

a. The Engineering Study shall be initiated by the contractor, in proposal form, either on his own initiative or at the request of the SPO. This proposal will be used by the contractor to submit information such as

estimated duration of effort, informal estimate of cost and other information that will materially assist the approving agency in making decisions regarding the proposal. Approval of an Engineering Study will normally, but not necessarily, lead to development and submission of a Change Proposal. This does not mean that a Change Proposal will always be proceded by an Engineering Study.

b. The Change Proposal shall be initiated by the contractor either on his own initiative or at the request of the SPO. This proposal will be used by the contractor to submit his recommended fix to a known deficiency. It will include such factors as materials involved, estimate of cost, method of accomplishing the change and any other information considered useful to the approving agency in evaluating the desirability of such change and to effect the necessary coordination prior to approval.

c. Both Engineering Studies and Change Proposals will be forwarded direct to the SPO. At the time a proposal is requested by the buying agency, the contractor will be advised in the fullest possible detail of the desired extent and type of proposal.

d. Emergency cases requiring immediate action may be reported by wire or telephone, within security limits, direct to the SPO. Emergency cases so submitted shall be confirmed by submitting a proposal clearly identified as confirming emergency action previously taken.

e. The prime contractor shall submit proposals on equipment fabricated or subcontracted by him. The method of obtaining information and approving proposals on subject equipment shall be as the prime contractor resolves with his subcontractors.

5. APPROVAL OF PROPOSALS

Approval of a proposal and end item effectivity will be made by the SPO, individually by written authorization subsequent to proper coordination. Approval may be given verbally but will always be confirmed in writing. Approval of a proposal will be the contractor's authority to obtain spares requirements from the depot and to procure and/or fabricate against the requirement. This action will be immediately confirmed by the issuance of a purchase request from the Project Support Office against the applicable contract or confirmed by a communication from the Contracting Officer. Two copies of the proposal will be submitted to the SPO and one copy to the SBAMA Project Support Office (SBRS). Subsystem proposals will be submitted simultaneously to the SPO and ADP and SBAMA Project Support Office. Proposals will be prepared on a locally reproduced form containing the following information in the order outlined. (See attachment #1).

a. Firm name and address.

b. Title will be either Engineering Study or Change Proposal.

c. Proposal Number - Each type of proposal will be numbered serially and identified with a contractor prefix. The number will serve to identify the proposal with the contractor, the type of proposal and the particular proposal. (For example: Engineering Study - LAC #2 or Change Proposal - IT-23). Revisions to a previously submitted proposal will have the same number as the original proposal followed by a dash number. (For example: Change Proposal HY-#16-1).

d. The date submitted will be provided.

e. The name of the major component shall be supplied for large complex end items such as aircraft or the name of the complete article for smaller components such as radios, instruments, etc. The model or type designation, preferably government assigned if available, will be shown.

f. Lowest Component - Furnish the most complete practical description of the lowest component affected by the change.

g. Nature of Proposal - This is one of the most important parts of the proposal. Give a full description of what the proposal entails, what equipment is involved, and what facilities are required. Any flight test requirement must be reflected. This is not to be construed as requiring details such as "change AN 3 bolts to AN 4 bolts", but sufficient information will be furnished to permit the approving agency to fully evaluate the scope of the proposal.

h. Reason for Proposal - This is again an extremely important part of the proposal. Here will be reflected the reason the proposal is being submitted, what the proposal will accomplish, and what the effect will be if the proposal is not adopted. If the proposal is based on unsatisfactory reports or field service reports, that fact will be stated. When the proposal is the result of SPO request, that fact will be stated identifying the letter, telegram, or other instrument.

i. Estimated Cost and Time Involved - An estimate of the cost and time to complete the scope of work of the proposal will be included. This estimate is for planning purposes and will not be binding upon the contractor.

j. Estimated Cost for Kits or Parts - On Change Proposals involving a kit, the estimated cost of the kit will be included if available. The proposal will not be delayed to develop this cost. Furthermore, these cost estimates are for planning and will not be binding upon the contractor.

k. Items Affected - The contractor will list at least the following items and indicate those affected, if any.

(1) Production Effectivity and/or Retrofit Required.

(2) Safety.

(3) Mission Effectiveness.

(4) Performance.

(5) Operating Procedure.

(6) Weight or Weight and Balance.

(7) Maintenance Procedures.

(8) Interchangeability.

(9) Service Life.

(10) Tools and Support Equipment.

(11) Data.

(a) Pilots Handbook.

(b) Maintenance Handbook.

(c) Overhaul Handbook.

(d) Parts Catalog.

l. Man-hours to Accomplish - The contractor will indicate the man-hours to accomplish a Change Proposal and the recommended level of accomplishment of field or depot/overhaul.

m. Source of Parts - The recommended source of parts for kits will be shown as contractor, vendor, or Air Force furnished.

n. Kit Availability - The approximate date kits will be available will be given.

o. Spare Parts Affected - All spare parts which will be affected by the proposal must be listed together with the recommended disposition.

7. MINIMUM REQUIREMENTS

Engineering Studies will contain the first nine listed items (a. thru i.) of information as a minimum. Change Proposals will contain the first eleven listed items (a. thru k.) as a minimum. All remaining information listed must be furnished before Change Proposals are incorporated as Service Bulletins.

8. ASSIGNMENT OF PRIORITY

Contractor will recommend the priority of effort to be assigned to a Change Proposal at the time of submission. The approving authority will assign the level of priority at the time of approval. Priorities will be defined as follows:

a. Emergency - Effort to preclude aircraft grounding or to lift an aircraft grounding or restriction seriously affecting combat readiness or mission accomplishment.

b. Urgent - Improve mission accomplishment or effectiveness and/or to correct situations bordering on safety of flight.

c. Routine - Corrective type items.

CONVAIR ASTRONAUTICS	ENGINEERING STUDY ☐ CHANGE PROPOSAL ☒	1 of 2
DATE 6-5-63	AFFECTS :	

NAME OF MAJOR COMPONENT	PART OR LOWEST SUBASSEMBLY	PART NO. & MODEL OR TYPE

TITLE OF PROPOSAL : **INSTALL IMPROVED WING FLAP SHUT-OFF RELAY**

NATURE OF PROPOSAL :

Replace the LAC 613209 Wing Flap Shut-off Relay with a MS25280-1 (Leach P/N 9225-4081) Magnetic Latching Relay. The new relay is approximately 1/6 the size and 1/4 the weight of the 613209 Relay and is an approved, hermetically sealed unit.

Prepair Service Bulletin & Kits for field installation.

REASON FOR PROPOSAL :

The existing Wing Flap Shut-off Relay, LAC P/N 613209, is outdated, oversized, heavy and unsealed. The relay has proven susceptible to wear and grooving of the latching mechanism due to aircraft vibration.

ES	ESTIMATED COST AND TIME INVOLVED :
	ADDITIONAL FUNDING REQUIRED :
CP	ESTIMATED COST FOR KITS OR PARTS : 4
	ADDITIONAL FUNDING REQUIRED :

ITEMS AFFECTED BY PROPOSAL :

SAFETY	MISSION FULFILLMENT	PERFORMANCE	OPERATING PROCEDURE	INTERCHANGEABILITY	WEIGHT OR WEIGHT & BALANCE	TOOLS & SUPPORT EQUIPMENT	MAINTENANCE PROCEDURE	SERVICE LIFE	FLIGHT MANUAL	MAINTENANCE MANUAL
☐	☐	☐	☐	☒	☒	☐	☐	☒	☐	☒

EST. MAN/HRS. REQ'D. TO ACCOMPLISH CHANGE IN FIELD

SOURCE OF PARTS FOR KIT	AVAILABILITY 13 WEEKS AFTER APPROVAL
PURCHASE	

DISPOSITION OF SPARES AFFECTED

INITIATED BY : LAC	APPROVED :

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